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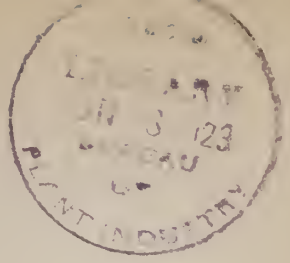

WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR WEEK ENDING JUNE 2, 1923.
(Unless otherwise indicated.)

HAVRE:

Crop conditions in this part of the state have improved very much during the last week. The first days were windy with the temperature fluctuating a great deal and with a very high evaporation. The 30th was very windy with the result that there was some damage to grains on the rotations. This wind also burned the domestic grasses and alfalfa. The outlook in general was as bad, if not the worst, for the season of the year since the station work started. On the night of the 30th there was a rain lasting about two hours with a total precipitation of .76 inch; the following evening there was a shower much more torrential in character, totaling .54 inch. Most all the crops are recovering and from appearances there will be little or no damage unless it be to flax that is not yet through the ground. With the crusted condition of the soil some of the flax may not emerge.

Grasshoppers are still reported as very bad. Engineers on the Great Northern say that at times when the hoppers are moving it is necessary to sand the track for freight trains. Authentic automobilists declare that sometimes the wheels on the car slip, and that the best way to get through is to provide chains. The counties are sending poison out in large lots and in most cases this has been very effective in protecting the crops.

Visitors at the Station during the week were Mr. E. W. Sheets, of the Division of Animal Husbandry, Bureau of Animal Industry, and Director F. B. Linfield, of the Montana Experiment Station.

JUDITH BASIN:

The weather during the past week has been almost ideal for crop growth. Considerable rain was received and the temperatures have been comparatively high. An abundance of moisture has fallen during the last half month, a total precipitation of 2.38 inches being recorded since May 16. The condition of all crops has materially improved and growth has been very rapid. All small grains, corn, sunflowers, alfalfa and sweet clover are up with good stands on the various plats. Winter rye has attained a height of over 12 inches and winter wheat is commencing to joint. Green ash is beginning to leaf out and practically all other trees and bushes are in full leaf.

Field work has been retarded due to wet weather and attention has been devoted chiefly to the building of livestock corrals, moving a cottage and pouring a concrete foundation for the latter, treating and cutting potatoes, and digging of water pipe ditches. All plats of corn on the rotations were harrowed and cultivated, trees in the shelterbelt experiments were cultivated, and a 12-acre field was prepared for seeding to alfalfa. The erection of the new office building has progressed rather rapidly and the shingling and lathing are now completed.

Maximum temperature 85, minimum 35; precipitation .80 inch.

HUNTLEY:

Frequent light showers during the week have kept things growing in good shape, though alfalfa and winter rye wilted somewhat on the 26th, when the temperature reached 90. Since that date the days have been getting cooler until a minimum of 35 was recorded this morning.

Field operations have been largely in the nature of weed eradication. Alleys, roads, and previously plowed fallowplats are being disked and preparation for plowing the regular fallow plats is under way.

The planting of potato varieties and the dry-land garden was completed this week and the ground is ready for seeding the bean and late sown forage plats.

Maximum temperature 90, minimum 35; precipitation .35 inch.

SHERIDAN:

Showers have been frequent all the week until the last two days, and fairly good rain fell on the 23th. But little field work was possible until Thursday.

All of the roadways have been marked and a portion of them have been disked out. Methods of seeding Sudan grass, the varieties of millet, the varieties of sorgo, and some of the bulk sorgo for feed, have been seeded. Tomato plants received from Mandan were planted yesterday.

The condition of the growing crops continues good. Winter wheat shows some improvement.

The total rainfall for May was 1.95 inches, .60 inch less than the average from 1917 to 1922, and nearly .90 inch less than last year. Soil moisture condition is fair at present, but there is considerably less moisture present than at the same time last year.

Maximum temperature 89, minimum 39; precipitation .96 inch.

MANDAN:

Agronomy.

The past week has been favorable for all field work, except that the soil is getting too dry to work to the best advantage. High winds have prevailed during part of the week.

Corn which was planted on May 21, was well up by the 28th with good stands. Corn was up this year nearly as soon as in 1922, when it was planted some days earlier.

Winter rye was completely headed early in the week. Winter wheat shows no sign of heading to date. Alfalfa, flax and sorghum, were seeded in the rotations during the week.

Mandan, continued:

Plats in the main field have been trimmed and the roadways worked. Alfalfa varieties, brome-grass, crested wheat grass and slender wheat grass, were seeded for the Office of Forage Crop Investigations. A few forage crop rotations, sorghums and millet varieties, were also seeded for the same office.

This section is in need of rain. Crops, however, are not in as bad condition as they were last year at this time. The total precipitation for May was 1.18 inches, as compared with 2.47 inches, which is the 45-year average for the same month. The total amount for the year to June 1 is 3.93 inches as compared with the 45-year average of 6.09 inches for the same period.

Maximum temperature 88, minimum 51; precipitation .53 inch.

Cooperative Grazing Experiment.

Cattle were started on the various pastures early in the week. The cattle were weighed again on May 31 and showed normal gains for the short period.

A brome-grass pasture is being grazed for the first time this year, It contains 35 acres and is being grazed with sixteen steers. This is the same number as the rotation pasture carries, which is seventy acres in size. The other four pastures each are being grazed with ten steers.

HORTICULTURE.

Tomatoes were set out in the field on May 28 and 29. A shower falling in the night of May 28, resulted in favorable planting conditions, and there appears to be a good stand. Ornamental plants, including geraniums and cannas, have been set out on the grounds. Ornamental shrubs, especially lilacs and spireas, are blooming freely this year. The lawns are now being mowed for the second time.

The first foliage spray is now being given to all fruit trees. Arsenate of lead, lime sulphur, and nicotine sulphate, are being used in combination.

Other work of the past week included suckering last year's buds, cultivation, and hoeing.

Aboriculture.

Weeds have been making a very rapid growth this past week in the tree and nursery blocks, and all possible help has been utilized to keep them in check.

BELLE FOURCHE:

The past week was the warmest of the season to date. The humidity was high the whole week. Thunderstorms on three successive days produced a total of 1.31 inches of water. One of the storms was accompanied by a small amount of hail.

Bellefourche, continued:

Crops are now growing rapidly. A few heads are appearing on the winter rye, and some of the plats of winter wheat are beginning to form straw.

The grain on spring plowing that failed to come up earlier is now appearing. The stand will probably be thin as the soil is crusted so badly that a portion of it will not be able to break through.

All plats of corn are now up. There will be a good stand on all plats. Maximum temperature 82, minimum 45; precipitation 1.31 inches.

ARDMORE:

Taken as a whole the week was the most favorable in the last six for conducting farming operations. Precipitation was recorded on two days during the week, but cultivation and other field work was possible during the remaining four days. From April 21 to May 9 was so wet as to prevent any field work whatever, and during the entire month of May it was possible to work in the fields only nine days. Much difficulty has been experienced in getting all crops planted. Many farmers are at least 30 days behind with their work.

The total precipitation for the month of May was 3.80 inches. The 11-year mean at this station for the same month is 3.20 inches.

Rotation plats and small fields of corn are just coming through the ground. A good stand was secured. A 15-acre field of corn was planted on June 2, which completed corn planting for the season. This is the latest date of corn planting since the station was established. Small grain crops, alfalfa and native vegetation are making a rapid growth. Alfalfa is about 15 inches high. There are approximately 15 acres of this crop on the station this year.

All species of trees used in the various shelterbelts at the station winter killed to some extent. White elm, green ash, box elder, Chinese elm, and buffalo berry did not suffer as much as northwest poplar and Tartarian maple. All willows killed back to the ground and northwest poplar killed back from one-half to two-thirds of its heighth. The caragana or Siberian pea tree killed back very badly, especially in close plantings. Chinese elm and box elder came through remarkably good.

Maximum temperature 85, minimum 41; precipitation 1.13 inches.

ARCHER:

From May 21 to 31 there was but one day during which there was no precipitation. The total during this period was 1.94 inches. The amount for the past week is 1.11 inches. Notwithstanding this condition practically all seeding is done except beans and increase millet.

Archer continued:

The wheat, oats, corn and barley on the Dry-Land plats are up and a good stand has been secured. These crops are also emerging on the varietal plats. The seedings of various cereals in field plats consist of 10 varieties of wheat, 9 of oats, 9 of barley, 5 of flax, 7 of peas and 12 of millet. Twenty-six plats of potatoes have been planted, which for the most part represents a survey of the certified seed potato industry in the eastern part of the State. In order to make a similar survey of corn 60 plats have been seeded to this crop. The cereal nursery is much larger than in previous years.

On this date the shelterbelts are beingplowed and dead trees removed. Practically all trees around the farmstead are dead and will be uprooted.
Maximum temperature 80, minimum 39; precipitation 1.11 inches.

AKRON: Week ending May 19.

A temperature of 29 was recorded on the morning of the 16th but examination since indicated no damage to the fruit. The ground was too wet for planting until the end of the week, when the rotation corn plats were seeded. Mr. Lewis T. Leonard arrived on the 16th and completed his seeding on the 18th. Much time was put in on getting ground ready for the wind break trees and the foundation shrubbery.

Mr. Fred D. Richey left on the 15th for North Platte. Mr. Lewis T. Leonard left on the 18th for Mandan.
Maximum temperature 72, minimum 29; precipitation 1.18 inches.

AKRON: Week ending May 26.

The sheep rotation corn fields were seeded Monday before the team was driven from the field by rain. Ground remained too wet the remainder of the week for seeding corn. Sod plow was kept going several days breaking out several small plats and one three-acre strip on the west side of the west pasture. The first spraying was given to the plum trees during the week. Other work was devoted mainly to laying the distributing system for the septic tank. The new pneumatic tank was filled and a test made of the water mains. Other work consisted in setting out the excess trees in the nursery and in filling in the sewer tile ditches.
Maximum temperature 85, minimum 43; precipitation 1.91 inches.

AKRON:

Plat trimming was started the first of the week and completed. Corn planting was started Thursday and all corn seeded by the end of the week, except one small increase plat of Silver King. The first corn seeded on the station is emerging and there appears to be a satisfactory stand on the surface planted ground. It appears that all early listed plats will have to be replanted. Stand data on the rotation winter wheat plats was taken today. The average stand is about 50%, a few plats running as low as 10%. All the plats are weedy and will be harrowed the first of the week. All the station roads have been disked and all alleys cultivated. The new and the west orchards were spring-tooth harrowed and hoed today. There appears to be a good set of plums and cherries but the apples and pears have not blossomed with the exception of a few of the crab varieties.
Maximum temperature 84, minimum 44; precipitation 1.28 inches.

COLBY:

The past week has been the best growing week that we have had for the season. Weeds have grown very fast. We were able to get a day and a half of work done in the fields, the first field work since May 12. Work consisted in finishing planting commercial corn and planting the June 1 date of planting sorghums. Corn planted before the wet weather started is up enough to cultivate. Rye is heading, winter wheat is not showing any heads, while a few barley beards are beginning to be in evidence. Weeds in the thin wheat are growing very fast, and are as tall as the wheat. Oats and spring wheat are looking fine.

It has been too wet to do any plowing for summer fallow. If there is no rain the fallow plats will be plowed the first of next week. There has been rain on the past six Sundays. Rain for the past week has been .79 inch on Sunday night, and .97 inch on Tuesday night and Wednesday morning. The Tuesday night rain carried considerable hail for the southwestern part of the county.

Total precipitation for May was 6.22 inches, the largest May precipitation that the station records show.

GARDEN CITY:

Growing conditions have been quite favorable during the past week, but showers coming in the early part of the week delayed field operations. Ninety-eight hundredths of an inch of precipitation was received during the week. This was distributed in three showers, each one enough to prevent field work for at least a day after it came.

Spring plowing for row crops was practically completed and the second date of planting of sorghum was seeded yesterday. Most of the time this week was spent in hoeing and cultivating alleys and doing odd jobs.
Maximum temperature 92, minimum 56; precipitation .98 inch.

DALHART:

The past week has been quit warm, almost sultry at times. The soil has warmed up considerably and conditions have been very favorable to crops just planted. The kafirs and varieties that were planted a week ago today have mostly germinated and emerged. Corn is up to a good stand and is about three inches high at this writing. There has been no precipitation to hinder field work this week and everything has progressed rapidly.

Three teams have been busy in the field during the entire week. The third date of planting was made on June 1 as per schedule. The remainder of the varieties and rate work was also planted on June 1. This included all varieties on fallow. Peanuts are being planted today. The first date of planting is being cultivated this afternoon in order to kill the growth of weeds that is just starting. The D.L.A. rotations are completed with the exception of the milo planting and this will be made the latter part of next week. Cotton varieties will be planted the first of the week.

Dalhart, continued:

The increase fields are ready to plant but it is hoped a good rain will arrive before the planting is made. The soil is getting pretty dry on account of the short rainfall for the month of May. This with the long dry spells the last two years depleted the soil moisture until the spring rains could not penetrate to any great depth. Field work and planting is farther advanced here this year than for the past several years.

Maximum temperature 93, minimum 50; precipitation 0.

TUCUMCARI:

With no rain since May 14, crop conditions are daily becoming worse, for temperatures have been unusually high and hot winds have been the rule a number of days throughout this period. Winter wheat and spring grains on the plains are reported to be dying in many cases, while in localities it is too dry to plant even with a lister.

Most of the cotton block was listed in the past week, for surface soil was too dry for surface planting. Unless the soil bakes, a stand should be procured. The June first date of planting was made yesterday, but much of the seed was planted in dry soil. The Station fields have dried to a depth of about four inches and below that depth there is a fair amount of moisture. Except where the soil dried before seeds could germinate, fair stands have been obtained on most plats and increase plantings. Fallow plats, center field, were plowed, while a strip of blow sand on the west side of the station was plowed and drilled to cane. Most of the south field, including early date plats and cowpeas and Sudan was cultivated this week.

Hedges were trimmed, lawns mowed, weeds hoed, and the orchard spring-tooth harrowed. All trees set out this spring are growing well, only six grapes have died, while a fair percentage of blackberries are living.

Evaporation for May 9.995 inches, highest of any May in six years; Precipitation 1.92 inches, compared with mean of 2.17 inches.

Maximum temperature 93, minimum 56; precipitation 0. Evaporation 3.006 inches.

BIG SPRING:

The hot, dry winds of the past two weeks have dried out the soil very much, and as a result very poor stands of cotton have been obtained in many places. Unless the seed had been planted very deep, the soil dried out before the seed could get soaked up enough to germinate. A rain of .6 inches fell on the night of June 2 which soaked things up in good shape and should cause lots of cotton to come up, which was lying in dry dirt before. Some hail accompanied this rain but no damage has been reported as yet.

The May 30 date of planting was made this week, and one field of two row alternate Milo and cowpeas was planted on May 29. With the exception of later dates of seeding, this should complete our planting for this year unless replanting becomes necessary. Other work this week consisted of knifing out the first and second dates of seeding and also one increase block of sumac.

Maximum temperature 101, minimum 55; precipitation .75 inch.

LAWTON:

Good growing weather prevailed most of the past week. Warm, windy weather the fore part of the week caused the small grain to give evidence of rapid maturity. A rainfall of 0.62 inch on the night of the 31st was accompanied by an extremely high wind and a small amount of hail. Only slight damage to crops and buildings occurred.

Three plats of winter barley and two plats of rye were harvested June 2. Present indications are that quite a lot of wheat and oats will be harvested within the next six days.

All of the cotton was replanted during the week. Such plats of grain sorghums as were washed out were also replanted. Cowpeas were planted on the 30th. The June 1 date planting of grain and forage sorghums was made on the 2nd. A little over seven tons of alfalfa were also put in the barn.

Cotton, which was planted on creek bottom land on May 28, was up to a full stand June 1. Cotton planted on the station land May 29 was breaking through the surface June 2. Germination of field seeds is very seldom that rapid.

Messrs. E. F. Chilcott and L. F. Locke were station visitors June 1.

WOODWARD:

We have had another week of almost daily rains, with a total precipitation of 2.57 inches. During the month of May we had a total precipitation of 3.11 inches, falling on twenty different days, varying in amounts from a Trace to 2.87 inches. Practically no field work has been possible excepting fighting weeds between showers. Very little planting has been done and practically all that has been done in this section of the State will have to be replanted.

Work during the week has consisted mostly of odd jobs, hauling brush, replacing posts in vineyard, work on roads, hoeing, some listing and cultivating.

Mr. E.F. Chilcott, the Superintendent, and Mr. L. F. Locke, made an official trip to Oklahoma City and Lawton during the week. Wheat over most of the territory travelled through is in excellent condition, most of it being very good excepting within about 20 miles south and east of Woodward where it is not as good. All row crops are very backward in the northwest section, there being practically nothing but corn showing. Farther south very little cotton was seen over an inch to an inch and one-half high. It was stated that some of this cotton had been up as much as a month but had made practically no growth on account of cool weather. Cotton is probably two weeks later than normal.

Maximum temperature 91, minimum 58; precipitation 2.57 inches.
Evaportion 1.452 inches. Average wind velocity 6.4 miles per hour.

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U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR WEEK ENDING JUNE 9, 1923.

HAVRE:

The past week has been characterized by rather cool and showery weather. The showers have however been rather local in character. On the 8th there was a heavy rain amounting to, at the smallest calculation, one-half inch on the east part of the station farm while on the plats there was hardly a sprinkle. The same has been true over this section of the state. The two rain gauges on the station are less than 600 feet apart. The total for the week amounted to .42 inch in one and .25 inch in the other.

Flax and corn are up but neither show real good stands. Neither, however, are so thin that reseeding will be done. Grain is shooting and shows a very healthy growth. Winter rye is heading and sweet clover is blooming.

A trip was made with Mr. M. L. Wilson, of the Extension Service of the State College, at Bozeman, for three days in Canada. This trip extended about 150 miles north and east of Medicine Hat, Alberta. Crop conditions there are much the same as in the northern part of Montana. Southern Alberta has suffered considerable damage from grasshoppers while the entire territory shows a very light rainfall for the month of May. Showers since June 1 have very materially improved the general crop conditions. One of the principal objects of the trip was to visit the farm of Mr. E. C. Hallman, of Arcadia Valley, who has about 1100 acres of brome grass in connection with a horse ranch, on which he keeps from 400 to 600 head of well-bred draft horses. Mr. Hallman uses from 8 to 16 horses in a team. Notes and photographs were taken of the teams and hitches.

Maximum temperature 80, minimum 25.

HUNTLEY:

Field work has been favored with good weather during the entire week. The plowing and cultivating of fallow, roads and alleys have been completed and the first cultivation of corn is under way. Sorghum, Sudan grass, bean varieties, and some late-sown grasses were planted in some of the miscellaneous experiments and sunflowers were replanted in the fertility tests. The first stand of sunflowers was badly damaged by cutworms.

Grasshoppers are numerous over most of the community and poison mixing "bees" are to be held here next week to prepare material for controlling the pests. At present the grasshoppers are doing no damage to crops on the station as they have not moved from their breeding grounds to the cultivated land, to any great extent.

Maximum temperature 81, minimum 46; precipitation .19 inch.

SHERIDAN:

Good rains the first of the week prevented any work in the field until Thursday. The remainder of the new breaking was then disked in preparation for seeding sorgo and Sudan grass. Seeding of these crops will be completed today.

The entire week has been quite cool, but crops have been making a fair growth. Winter wheat and the barley in the varieties are in the boot. Weeds are growing rapidly.

Young grasshoppers are appearing on the station to some extent. In many places near here they are quite thick and are doing considerable damage. A county wide campaign of poisoning has been started and it is hoped to keep them under control.

Maximum temperature 79, minimum 48; precipitation 1.92 inches.

DICKINSON:

There have been two good showers during the week, one accompanied by a high wind which did a small amount of damage on the station. Crops have developed rapidly since the rain, the present condition being better than at this date last year.

All trees and shrubs have made an unusually rank growth this spring. It has been necessary to spray most all trees for a measuring worm and now blister beetles are starting on the caragana hedges. Most all fruit trees of bearing age have set a full crop.

Corn on the Rotations was given the first cultivation during the week. Some millet and oats has been seeded for hay.

Sweet clover and alfalfa are about ready to cut. Where sweet clover was seeded with wheat last year the yellow flowered now has a good stand but the white-flowered is very thin.

Maximum temperature 88, minimum 39; precipitation 1.06 inches.

MANDAN:

Agronomy.

The past week has been dry, but for the most part cool, so that grain crops have not suffered to the extent possible, because of dry conditions.

All fallow plats in the rotations were plowed and harrowed during the week. Winter rye was also turned under for green manure. The growth was not as heavy as the rye in the other rotations, or on the continuous cropping plats.

Weeds are making rapid growth. The alleys were cultivated and some hoeing has been done.

Corn is making a fair growth on the plats; it will require cultivation soon.

About seven acres in Field P has been plowed for sorghum. Alfalfa varieties seeded on May 29 had emerged by June 4.

Brome-grass, crested wheat grass and alfalfa, are suffering from the drought, and the chances are that a light crop will be harvested. Unless a good rain comes soon, most of the crops will have to be cut. There were indications of rain two or three times during the week, and a light rain is falling today.

Maximum temperature 88, minimum 40; precipitation .15 inch.

Cooperative Grazing Experiment.

The native vegetation is in need of rain. Practically all the moisture that was in the sod in the spring has been exhausted. Some of the grasses are starting to head out earlier than usual.

The cattle appear to be doing well on all pastures. The brome-grass pasture is producing plenty of feed, and most of the grass is headed out at present.

Mr. A. C. Cooley, Agriculturist in Charge, Demonstrations on Reclamation Projects, and Mr. Leroy Moomaw, Superintendent, Dickinson Sub-Station, were among the visitors of the week. The number of farmers visiting was unusually large.

There appears to be a good set of plums, crabapples, and such small fruits as gooseberries and currants this year. As in previous years standard apples have set but little fruit. All fruit trees are now being given their second spraying for the year. Grape vines are being sprayed with Bordeaux mixture, in the hope that this spray will act as a repellant to leaf hoppers, which were very destructive last year.

All garden crops are up and looking good. The late cabbage and cauliflower has been set out in the acre garden. Rabbits have severely damaged earlier cabbage plantings.

The groups of flowering shrubs on the grounds have been at their best during the week. Some of the Spireas are especially attractive. Planting in flower beds has been completed.

Hoeing weeds and cultivating has also been in progress throughout the week.

BELLE FOURCHE:

One of the finest rains yet experienced in this section of the country fell on June 4 and 5. The rain fell continuously though slowly for about 24 hours. The amount of rain was 2.36 inches and it was almost all taken into the soil, there being practically no run-off.

The whole week was cloudy and rainy though the amount of rain that fell on other days was small. The temperature and evaporation were unusually low for this season.

All crops except corn are in excellent condition. All small grains are forming straw. Winter rye is headed. The corn is beginning to show the effect of the continued wet cold weather, but a few warm days should revive it. Planting of the sorghums was to have been started early in the week but the soil has been too wet for any field work.

Maximum temperature 80, minimum 45; precipitation 2.58 inches.

ARDMORE:

Rain fell every day during the week except Thursday. No field work was possible except on Monday, and very little outside work of any kind was done during the week. Between 5:00 p.m. and 7:00 p.m. the 4th 2.00 inches of rain fell, and the total precipitation for the 24 hour period was 2.58 inches,--the heaviest rain for any 24-hour period in the history of this station. This torrential rain was accompanied by a small amount of hail, but crops were not damaged to a noticeable extent.

In the surrounding country the acreage of all crops has been greatly reduced because of the frequent rains. Very few farmers have planted corn and it is so late that many will not plant. During the past seven weeks it has been possible to work in the fields on the station just ten days.

Small grain, alfalfa, and native and cultivated grasses are making a very rapid growth. Seventy acres of millet and cane remain to be planted on the station.

Mr. E. W. Sheets, Chief of the Division of Animal Husbandry, visited the station on the 8th. While he was here arrangements were completed for doing considerable permanent improvement during the current fiscal year. The beef cattle shed will be added to by the construction of a hay mow 8 feet deep, 24 feet wide and 96 feet long. A pit silo will be constructed in connection with the shed, and a pipe line will be laid below frost for supplying water during the winter months. This line will be approximately 1400 feet long. Feeding pens will be built, and arrangements generally made for conducting a winter beef cattle feeding experiment. Money was provided this year for purchasing the cattle used in the grazing experiment. During previous years these cattle have been borrowed.

Maximum temperature 83, minimum 41; precipitation 4.45 inches.

AKRON:

The past week has been cloudy by far the greater proportion of the time and has proved very favorable for plant growth and for the accomplishment of field work. Three series to be fallowed for crops next year as well as the rotation fallow plats were plowed. All but one of these series was packed the team being driven from the field Saturday afternoon by rain. The rotation winter wheat plats were harrowed early in the week to destroy weeds. The rotation and the sheep rotation corn plats were harrowed. The Cereal Breeding plat of corn was cultivated. The early listed corn was reseeded Monday. The remainder of the variety Forage Experiment was seeded Friday. The plums were given their second spraying of the season and the apples their first spraying early in the week. Both orchards and the shrubbery plantings were cultivated.

Maximum temperature 83, minimum 47; precipitation .08 inch.

COLBY:

Wet weather still continues; total precipitation this week 1.75 inches. This makes a total precipitation for the past 45 days of 9.94 inches, which has been very uniformly spread out over the period from April 26 to date. The soil is so thoroughly soaked that a light shower now keeps one out of the field for a considerable time. We did get three and one-half days' work in the fields this week, but none of this was used in planting sorghums. The plats would have been dry enough for listing by Friday but it has been too wet since. A few plats were plowed for summer tillage on Thursday, they were all plenty wet to work. Sorghum ground was disked and the first date of planting sorghums were put in the first of the week. There have been a few localities in the county where the ground was very weedy or where it had not been worked for a season or two that the farmers have seeded their sorghums. Probably not over two-thirds of the corn acreage was put in as was contemplated the first of May. Weeds are growing very fast everywhere and especially in the thin wheat. The late fall-plowed plat of winter wheat looks very much better now than the early fall-plowed plat. The commercial field of winter wheat on the station shows the cultural effect for winter wheat seedbed preparation this season, which is general over the county. Two-thirds of this field was early fall plowed and has been disked up to put in sorghums, the balance of the field which was double-disked promises a very satisfactory yield.

HAYS:

As it was reported some weeks ago regarding the drought, so it may be reported now regarding the rains. It continues to rain! During the month of May it rained 17 days out of 31, and during the first nine days of June it has rained six days, with excellent prospects for more. Generally these rains have ranged in amounts from .20 to .75 inch each, and all have fallen gently without being accompanied by wind, so that none has been lost by run-off.

Hays, continued:

The damp cool weather has stimulated a heavy growth of winter wheat where it was thin. This is especially true on the fallowed land. But it has also stimulated an equally heavy growth of weeds which at the present writing are out growing the wheat. The wheat plants on the fallowed fields, and likewise to a lesser extent on the early fall plowed fields, have produced large spreading growth with only comparatively few upright stalks to the height of about 24 inches, which now contain head in the boot, practically none of the heads having yet emerged. The same plants are also producing a sort of second growth which is very heavy, there being as many as from five to twenty-five stalks pointing in all directions except down and only few extending straight up. These stalks are of a light green color, from three to eight inches long and as yet there is no evidence of a head in the boot.

The winter wheat stubbled in or seeded on disked wheat stubble shows a stand ranging from 60 to 90%. Although this wheat stooled but little, every plant has made from one to a half dozen stalks about 18 to 24 inches high and most all of which now has from very small to fair sized heads fully emerged. It seems the entire energy of the plants have gone into the stalks, and no excess growth has been made--no second growth has developed. In this wheat, although the growth is not nearly heavy enough to shade the ground or the heavy stand of weeds and grass on the ground, the weeds and grass seem to be dwarfed, is only from one to four inches high and making but little growth, so there is no danger of the wheat being overshadowed on these plats.

The spring seeded small grains are making very heavy growth on the fallowed and green manured plats but for some reason are not making normal growth on any of the other methods except kafir stubble, which is very good. Perhaps these crops need a little more sunshine. The first crop of alfalfa on the upland has been mown, but cannot get dry enough to weigh. On the low land the ground does not get dry enough to enable mowing the alfalfa even though the stage for best mowing is long past. It should be stated that none of the ground having a heavy vegetative growth (except fallowed land) is wet more than a foot deep in spite of the frequent rains which have been occurring. Row crops are looking good.

Mr. Zook, of the Dry Land Office, and Mr. Spragua, of the Cereal Office, both from North Platte, visited the station June 8 and 9.

GARDEN CITY:

Rains again this week have prevented field work for the greater part of the time. Monday we received .1 of and inch, Wednesday .7 of an inch, Thursday a trace, Friday 2.31 inches and Saturday .61 of an inch, making a total of 3.72 inches for the week. This brings the total precipitation received since April 26 to 13.48 inches. This amount of rain fell on seventeen different days. On three other days a trace of precipitation was recorded. The longest drought recorded, from August 8, 1922 to April 26 when only 1.26 inches was received preceeded this wet weather. The precipitation received so far this year is only 3.39 inches below the average annual precipitation for the fifteen year period from 1908 to 1922, inclusive.

Garden City, continued:

Crops that are up are looking fine and pastures are exceptionally good. Alfalfa in the irrigated rotations and general fields is ready to cut. So far the only row crops planted on the dry land project are the sorghums in the first two dates of seeding test.

Some spring-tooth harrowing and disking was done the first of the week and planting would have started Wednesday were it not for the rain. It will probably be necessary to spring-tooth all sorghum plats before planting can be done.

Maximum temperature 95, minimum 54; precipitation 3.72 inches.

DALHART:

This has been the wettest week of the year. It has also been rather cool for the most part. There were three rather warm days during the week in which there was considerable sunshine. The wind movement has been irregular. At times the wind would blow hard for possibly an hour to several hours, again there would be very little. The storms have been rather sudden in approaching. There was some washing on a few plats which was due to the amount of rain rather than in the manner of its falling. The rains have all been slow in falling and extending over a considerable period of time. It has fallen so continuously, however, that the soil was unable to take it up, thus causing a slight washing. There does not seem to have been any damage to planted crops.

There has been very little field work during the entire week. The operations were commenced Monday morning and carried on until the rain came up. The plows were both busy at this time. The cotton variety planting was started but ended rather abruptly. When the planting was begun there were very few clouds showing and the weather was quite warm. It did not look as if it would rain within a week. Then after getting four varieties listed the storm broke. From the way it came up it looked as if there would be a regular blowout. It calmed down within a few minutes after hitting and continued a steady quiet rain. The remainder of the week was spent doing some road work and getting machinery in shape so there will be no delays upon commencing field work again.

Maximum temperature for the week was 91, minimum 52; precipitation 4.21 inches. These rains were recorded as follows: 4th- .98 inch, 6th-.70 inch, 7th- 2.04 inch, 8th- .37 inch, 9th- .12 inch. Most of the rain fell during the night.

TUCUMCARI:

Following a rain of 0.26 inch on the 5th and 1.48 inches on the 7th, crops and pastures look much better than early in the week. The variety plats and north field plats were planted, with three exceptions, before the rain, and indications point to good stands. Cotton planted a week ago has not emerged to a good stand and it is possible replanting will again have to be done.

Tucumcari, continued:

In order to have the seed planted in moist soil, cotton was listed, and it is now feared the rain buried the seed too deep in spots. Crops planted some weeks ago are doing well and only in rare instances was any "planting in" resorted to. No plats, except cotton, were replanted. Increase crops all look well.

Before planting the north field this was spring-tooth harrowed again. It was necessary to plow the H and N plats Methods of Fallow with milo, for thistles and nettles were very thick and would soon have gone to seed.

Mr. Sheets, of B.A.I., is expected to arrive today, while Mr. Lantow, of the New Mexico State College, arrived yesterday. These men will confer relative to steer feeding plans the coming fall. It is hoped forty head can be fed, largely on station grown roughage. With favorable seasonal conditions, the planted acreage of cane and cowpeas should be sufficient to carry the animals throughout the proposed period.

Maximum temperature .93, minimum 53; precipitation 1.74 inches. Evaporation, 2.194 inches. Average wind velocity 6.0 miles per hour. The mean rainfall, eighteen year average, for the first five months of the year is 5.56 inches, while to the close of May this year 7.27 inches has been received.

LAWTON:

Notwithstanding the fact that untimely rains fell during the week to the amount of 2.06 inches, considerable field work was accomplished.

Thirty-six plants of small grain--mostly wheat, were harvested as maturity and favorable weather permitted. The ends of all row crop plats were trimmed and a little more than one-half of the sorghum thinning was completed. Some cultivating and quite a lot of mowing was also done to good advantage.

Weed growth has taken full advantage of the wet weather of May and June to date. A few fields in the surrounding country appear to be abandoned, usually where cotton failed to make a stand or unsatisfactory growth.

Wheat and oat harvest is ready and dry weather only is needed to permit such operations to get under full headway.

The second cutting of alfalfa will be ready before harvest is completed in many instances. Most of the corn is now too large for cultivation and most fields are pretty weedy. Late planted cotton is doing fairly well but the weather is too cool to permit rapid growth.

Lawton, continued:

The maximum temperature recorded for the week was 90 while the minimum was 61. The wind velocity has been low except in storm periods. Rain is usually accompanied by high wind velocity.

Press reports indicate much flood damage throughout the greater part of the state. This particular section of southwestern Oklahoma, however, is quite fortunate in that respect, so far.

WOODWARD:

Since the first of the year we have had a total of 14.89 inches of precipitation, 10.66 inches of which has fallen since the 1st of May. We have had some precipitation on 41 of the past 57 days, the longest period during that time with no precipitation being five days.

The D.L.A. kafir plats have been prepared for planting three times and each time we have had sufficient rain to prevent planting. Very little planting has been accomplished on account of this extremely wet weather. It is reported that some farmers have replanted from two to four times and probably very few of them are any better off than we are as we had another heavy rain of 1.43 inches last night, (Friday).

The grapes were sprayed with arsenate of lead and Black Leaf 40 to control grape leaf hoppers and grape root worms. A few trees of Early Richmond cherries have been picked, some new trellisses have been put up for a new part of the vineyard, considerable plowing has been done and other work has consisted of odd jobs such as repairing machinery, implements, etc.

Maximum temperature 87, minimum 54; precipitation 2.45 inches. Evaporation 1.578 inches. Average wind velocity 5.9 miles per hour.

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WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

JUN 16 1923

REPORT FOR WEEK ENDING JUNE 16, 1923.
(Unless otherwise indicated.)

JUDITH BASIN:

Dry hot weather has prevailed throughout the week. No precipitation whatever was received and the comparatively high temperatures combined with strong hot winds and an excessive amount of evaporation have been very unfavorable to crop growth. The precipitation to date during June has totaled only .36 inch, and was distributed in five light showers, none of which exceeded .15 inch, whereas the normal rainfall for the entire month of June is 3.10 inches. At the time of the present writing, however, a slow steady rain has commenced.

Pasture grasses and all hay crops have burned badly and even though a heavy rain is now received, the yields of alfalfa and brome grass will be materially reduced. As yet no injury to the various grain crops has been noticeable, with the exception that winter rye has headed out very short and subsequent growth has been greatly retarded.

Field work has been devoted largely to the plowing of summer fallow land and cultivating of trees, corn, sunflowers and other row crops. About 500 feet of water pipe were laid and over 750 feet of trench were filled in.
Maximum temperature 86, minimum 34.

HUNTLEY:

Warm, windy weather has prevailed throughout the week and crops all show the effects of the diminished supply of soil moisture. Winter wheat is firing and winter rye is all headed out on short straw. Alfalfa was cut on the 15th as the crop was drying up rapidly, and early harvesting was necessary to secure a yield.

The cultivation of row crops was completed early in the week and hand hoeing after the cultivator is now in progress. Poison bran mash was scattered around the edges of the Dry-Land fields to kill grasshoppers which are numerous along the roadsides and in sod land.

Hogs in the Dry-Land pasture experiments were weighed on the 11th. Good gains were made by all lots. The ten pigs on the acre of winter rye and receiving a full ration of corn and middlings from a self feeder averaged 31 pounds apiece gain for the 14 day period. Allowing 10 pounds apiece for "fill" the average daily gain was about 1½ pounds each. The rye pasture appeared to be eaten down fully as closely as has been the case in former years when the pigs received only a 2% supplementary grain ration.
Maximum temperature 92, minimum 41; precipitation .04 inch.

SHERIDAN:

The weather has been quite warm during the most of the week. A heavy southeast wind yesterday caused some grain to fire slightly. Crops for the most part have been growing rapidly. Winter wheat and some of the barley varieties are beginning to head. All of the late seeded crops have now emerged, including Sudan grass seeded on the 9th.

The corn, sorgo, and potatoes in the Rotations were cultivated during the week. Cultivation of all row crops for the first time over will be completed today. Thinning of the corn in the Rotations has been started. Plowing the Rotation plats for fallow was begun yesterday. The winter rye plats were plowed the 13th.

Maximum temperature 88, minimum 46; precipitation .34 inch.

MANDAN:

Agronomy.

The past week has been warm and dry with high winds. Small grain in the rotations has not burned much to date but rain is now needed for all crops. Winter rye in the manured rotation is drying up rapidly and spring wheat drilled in stubble is now a total failure. This is also true to a large extent of this same method in the surrounding country. Corn continues to make a good growth.

Weeding has been in progress all week. Two fields of feed corn were cultivated but none was done in the rotations.

Brome grass and alfalfa are drying up fast and are now being cut in the feed fields.

Sweet clover in the rotations was turned under for green manure on June 15. Yellow sweet clover was used in the rotations last year and is ready to turn under sooner than the white sweet clover.

About ten acres of sorghum remains to be seeded but this will not be done until We get a good rain.

Maximum temperature 88, minimum 49; precipitation .01 inch.

Cooperative Grazing Experiment.

Native vegetation is drying up and turning browin in spots on the prairie. Pasture sage (Artemisia frigida) is again making good growth in the 30-acre pasture. The cattle appear to be making rapid gains in all pastures.

Over 100 people, mostly farmers from South Dakota who had just finish- a tour of the Flasher and New Salem Dairy Circuits, visited the grazing experiment on June 14 and spent some time going over the various pastures.

Mandan, continued:

Arboriculture.

The main nursery fields received their first irrigation this week. It took two and a half days to finish the job. Mr. A. W. Emerson and Mr. Ralph E. Hansen, who inspected shelterbelts last summer, have both returned and will do the same work again this year. Work in making up inspection sheets and maps is nearly finished.

ARDMORE:

The ground was too wet all week for any field cultivation except on Friday and Saturday, and only light surface cultivation was possible on these dates. Rotation plats of corn and small fields of the same crop were cultivated during the week for the first time this season. Approximately 10 acres each of millet and sorgo were seeded on the 16th. Sixty acres of cane are to be planted yet this season.

About 10 acres of cane had to be planted over because of being destroyed by the torrential rain last week.

The weather during the week was exceptionally warm, with two small showers and not much sunshine. All small grain crops are making a very remarkable growth. Alfalfa which is just starting to bloom doubtless will make the heaviest yield in the history of the station. Native vegetation is making a very rapid growth. There will be an excellent wheat grass crop.

Weeds on the station are exceptionally well under control considering the wet season. Saturday night of this week marks the close of eight weeks during which time it has been possible to work in the field only twelve days, and only twenty days field work has been possible since spring opened.

Work is well under way in digging 1400 feet of pipe line ditch 5 feet deep and a pit silo 14 feet in diameter and 24 feet deep.

Maximum temperature 85, minimum 51; precipitation .36 inch.

AKRON:

Heavy rain the fore part of the week interfered with field work the first few days but nice progress was made the latter part of the week. The green manure rye plats and the rye field on the sheep rotation were plowed under. The forestry was disked. Other work accomplished was the plowing of the rate and spacing corn experiment, the cultivating and hoeing of the alleys on the Cereal Project, the packing of the remainder of the fallow strips plowed last week, the cultivating of the station plat roads, and other minor jobs.

Recent examination of the orchard indicates maximum set of fruit on the main cherry and plum varieties, and a good set of fruit on some of the apple varieties. Longfield apple appears to now have a full set of fruit and the Northwestern Greening variety for the first time has a partial set of fruit.

Akron, continued:

Several of the trees set out last season failed to survive the winter and several of the older set-out trees in the west orchard are dead this spring, mainly the plum and cherry varieties set in the low part of the orchard. All the trees and shrubs set out this year appear to promise a high percentage of survival with the possible exception of the Russian olive hedge set out along the front road line.

Spring grains are making excellent progress and barley is at the point of heading without having once suffered for moisture. Indications now point to heavy yields of all spring sown grains. Corn made nice progress the past week due to the warmer temperatures which prevailed. Weeds also are causing considerable worry and the station is about a week behind with the seeding of forages for feed.

Maximum temperature 87, minimum 49; precipitation 1.62 inches.

NORTH PLATTE:

Following the example set by May the month of June has continued cool and wet. Corn was planted at odd intervals and much of it quite late. Weeds have gotten a long start and farmers attempting to handle large acreages with little help are confronted with a real problem. On the station five days of field work have been accomplished in the last two weeks. Sorghum planting is being finished today.

Winter wheat on early fall plowing and fallow, which were the only preparations upon which full stands came through the winter, has been lodging badly during the last rains. No rust has as yet appeared. All spring grains have made a rank growth.

Very little alfalfa has as yet been cut. The station began yesterday with three mowers. The crop is heavy but the quality poor.

HAYS:

The past week has been one very favorable for field work after the first two days, when the ground was pretty wet and heavy, especially for plowing. The interesting thing about conditions is that while the ground has been too wet and heavy for plowing during most of the rainy period just closed, in many places dry soil is still being turned up from the bottom of the furrow slice. This is especially true where there is any vegetative growth.

Wheat on disked stubbled plats is coming along nicely. It is in the late bloom stage. On fallowed land it is slowly heading. All spring small grains are looking better than a week ago. Considerable growth has been made so that now it seems all these will be of fair height for harvesting. Oats and barley are all in head except for a few of the more tardy oat plats. Spring wheat is developing about normally. Corn and sorghums are making good growth. Peas are about 12 to 16 inches high and looking fine.

Hays, continued:

The work has consisted almost wholly in cultivation and plowing for weed killing. A few soil samples were taken, bottom land alfalfa plats mown, and considerable thinning of sorghum stands.

The work on the general farm has consisted largely in mowing of alfalfa hay, cultivation of row crops and seeding of Sudan and sorghums for hay crops. Work is very much behind on account of the past few weeks of rainy weather.

Maximum temperature 84, minimum 54; precipitation, Trace.

GARDEN CITY:

Weather conditions have been such that some field work was done this week. All row crop plats were prepared for planting and a part of them were planted. A rain of .95 of an inch last night prevented any field work today. The rain last night lasted only about an hour and came down so rapidly that considerable washing took place on the lister planted plats. The soil was packed and will probably have to be tilled again before any seeding can be done. Twice this spring we have been ready to plant when rain came and prevented any further work.

At present the prospect for a good crop of spring small grains is good. Barley and oats are beginning to head. The potatoes on rotation thirty-seven are beginning to bloom.

Director Farrel, of the Kansas Station, spent two days on the station this week.

Maximum temperature 86, minimum 53; precipitation 1.05 inches.

DALHART:

The past week has been very favorable to crop growth. The weather has been quite warm with very little wind until Saturday. Before the soil was dry enough to work another rain was recorded which delayed field operations a little longer. This rain fell in the late evening of the 12th and amounted to .41 inch. In Dalhart, just four miles northeast of the station, .80 inch was recorded. This rain came in a heavy shower and did not last long.

Field operations were commenced Thursday morning. The three teams have been in the field constantly during the remainder of the week. All the fallows were plowed on the 14th and 15th. The cotton varieties and spacing work was put in on the 14th. This work was directed by Mr. B. M. King of the cotton office. During the remainder of the week the cowpea variety field was prepared for planting and all the milo, etc., that remained to be planted on the rotations was completed. This finishes all of our experimental work except the cowpea varieties and the last date of planting. The June 15 date was planted as per schedule. Good stands prevail on everything except the earlier dates of dwarf feterita.

Dalhart, continued:

The increase plantings will be made as soon as possible. It is hoped that this work can be completed next week. The cultivators will have to be started the first of the week but this will not require more than one day to cover all crops that are ready for cultivating.

Station visitors from out of town during the week were Mr. B. M. King, of Lawton Field Station, and Mr. Fielder, Secretary of the Panhandle Plains Chamber of Commerce, of Amarillo.

Maximum temperature 92, minimum 54; precipitation .53 inch.

TUCUMCARI:

Field work has progressed well the past week and the weedy areas are gradually being reduced. All increase listed land was harrowed, as were the listed plats in the M.C. group. Surface planted variety plats were harrowed just as the seedlings were emerging, while the same was true of the kafir and cowpea plats, north field rotations. Cowpeas, Sudan and date plats in the south field were cultivated, as well as all surface planted center field plats.

A four-acre strip of increase Sunrise kafir and Dwarf feterita, north field, failed to make a satisfactory stand, so was replanted with surface planter run in the lister furrows. Weeds are growing unusually rapidly this spring and some time was spent in hoeing around the shrubs, tree rows, and orchard. Roadways were mowed early in the week.

The past week a number of local showers have fallen throughout the county, although some spots have been missed. Sunday night Tucumcari reported 1.15 inches, with 0.10 inch the following night. The station gauge read .04 Sunday night, none Monday night. Crop conditions are better, on the average, than for some time past, but in some localities rain is badly needed. Station crops are growing well, since there is abundant moisture below the third or fourth inch.

Mr. E. W. Sheetz, Acting Chief of the Division of Animal Industry, visited the station early in the week to study local range and cattle conditions, with the view of cooperating in conducting steer feeding experiments the coming fall and winter. Professor Lantow, State College, was here at the time and stated the State College would cooperate so far as funds would permit. Mr. B. M. King, of the Cotton Office, stationed at Lawton, spent two days at the station and visiting cotton fields near Tucumcari.

Maximum temperature 94, minimum 53; precipitation .04 inch. Wind velocity 5.6 miles per hour. Evaporation 2.239 inches.

BIG SPRING:

Weather conditions this week have been rather favorable for plant growth, although the sand has blown considerable on two different occasions. The hard rains of last week packed the ground so badly that even a light wind would start the sand to blowing; this damaged the young cotton somewhat. Cotton is getting an unusually late start this year, and many farmer are reporting very poor stands even after second and third plantings.

Big Spring, continued:

The June 15 date of seeding was made on time; other work of the week consisted of cultivating, trimming, and thinning plats.

Mr. Sheetz, of the Animal Husbandry Division, was a station visitor this week.

Maximum temperature 96, minimum 61; precipitation .31 inch.

BIG SPRING: Week ending June 9.

Weather conditions have varied considerably this week. The first part of the week the weather was hot, then a sand storm occurred and today (Saturday) a heavy rain fell. 1.45 inches fell this morning in a very short time, and it came with such force that a large amount of run-off occurred. While the rain will very materially help the crops that are up, it packed the ground so hard that replanted cotton will have a hard time getting through the crust.

It was necessary to replant several plants of cotton this week as well as the F plats of sorghums in the M.C. series. The rest of the plats are all up to a good stand. Other work this week consisted of knifing all plats in the D.L.A. project and the cotton varieties. One increase field of Milo and cowpeas was also knifed; the thinning of the first and second dates of seeding of sorghums was started this week also.

Mr. B. M. King, of the Office of Crop Acclimatization and Adaptation Investigations, was a station visitor on June 7 and 8.

Maximum temperature 96, minimum 62; precipitation 1.57 inches.

WOODWARD:

At last we have had an entire week without any precipitation, and have been able to make good use of the time. On Monday afternoon cowpeas, beans, cotton and Sudan were planted on the D.L.A. plats; Tuesday we ran two planters and planted kafir, milo, sumac, and broomcorn; Wednesday, cotton was planted for the rate and space work. The planters have been kept busy the rest of the week either on the Cereal Project or in the general field.

As we had prepared the plats for planting three times, and each time received enough moisture to prevent planting, this time we planted and then cultivated, as it was getting so late we feared to risk cultivation first again.

A plat of ground has been plowed for cowpea hay variety test; alfalfa has been cut during the week and is being hauled in at present. We started binding wheat on D.L.A. plats yesterday and this work will be finished today, (Saturday). Some of the crops that were planted on Monday and Tuesday are beginning to show up already. Some of the milo has germinated and was practically to the surface within about 72 hours after planting.

Mr. B. M. King, from Lawton, is visiting the station today.

Maximum temperature 98, minimum 57; precipitation 0. Average wind velocity 6.4 miles per hour. Evaporation 1.513 inches.

NOTE:

Field men are requested to return all unused transportation requests to the office immediately upon the termination of June 30.

NOTE:

DEPARTMENT OF AGRICULTURE
OFFICE OF CHIEF CLERK.
Washington, D. C.

June 15, 1923.

MEMORANDUM FOR CHIEFS OF BUREAUS, DIVISIONS AND OFFICES.

At a meeting of the Federal Purchasing Board held June 14, 1923, it was suggested that wherever storage facilities were available, it would be wise to lay in coal during the summer months for at least a part of next winter's requirements. It is thought that if coal is obtained in the dull season better prices may be secured than if deliveries are not asked for until autumn, and such action would, to some small extent, relieve traffic congestion later.

I am bringing the matter to your attention in order that you may consider advising your field stations to take action soon after July 1 to secure next winter's fuel requirements to the extent that storage facilities are available.

(Signed) R. M. Reese,
Chief Clerk;
Director of Purchases.

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WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR WEEK ENDING JUNE 23, 1923.
(Unless otherwise indicated.)

HAVRE:

The week ending June 16 was fairly favorable for crop growth. Temperatures were medium low. There were several wind storms but of short duration so the soil did not move enough to damage crops to any extent.

The week ending June 23 has been a very wet one. Beginning the afternoon of the 16th and lasting for 24 hours there was a steady rain that totaled 2.35 inches. On the 18th and 19th there was a shower of .15 inch each day. On the 20th there was .38 inch and on the 21st .79 inch making a total of 3.82 inches for the week.

Grain crops are progressing rapidly. Stands of corn are good but the growth has been slow. Flax will have to be reseeded because of blowing just after seeding and baking after the rains. Sunflowers on the plats have been eaten by grasshoppers and a small beetle and must be reseeded.

Although there is more moisture in the ground than for several years crop conditions west of Havre are poorer than they have been since the station started because of grasshopper injury. Nearly all the crops, and in many areas the grass and weeds, have been taken from Kremlin to Lothair about 75 miles west. The grasshoppers extend as far south as Fort Benton and in places north to the Canadian line.

Mr. John M. Stephens was at the station on the 15th and 16th. An inspection trip was taken through the grasshopper infested area as far west as Shelby.

JUDITH BASIN:

Cool, rainy weather has prevailed throughout the week and a total of 4.05 inches of precipitation was received. Although this is the largest amount of precipitation ever recorded in a single week in the history of the station, the character of the rainfall was such that only a small amount of run-off occurred, and the soil absorbed practically all of the moisture. The rain arrived at a very opportune time for all grain crops but was too late to be of much benefit to alfalfa. Alfalfa was burned and stunted badly by the hot, dry weather of the previous week and about 40 per-cent of the plants are now in blossom. Unless the present wet weather continues so as to prevent cutting, harvesting of alfalfa will commence about 10 days earlier than usual, and the yield of hay will be comparatively light. All small grain crops have made a good growth but the weather has been too cool to permit corn to make any noticeable progress. Beans and potatoes have also been at a standstill, but clover and alfalfa seeded this spring have made a marked growth.

Judith Basin, continued:

Due to the abundance of moisture, all operations in the field have been impossible during the entire week. Work has been devoted to laying of water pipe and sewer tile, building operations, printing stakes, repairing machinery, and filling in about new buildings.

Director F. B. Linfield and Mr. J. M. Stephens visited the station during the week.

Maximum temperature 81, minimum 41.

HUNTLEY:

Daily rains followed by cool, cloudy weather have done much to revive crops, which were greatly in need of moisture. Winter wheat on most plats is fully headed and a few heads are appearing on the oats plats. Spring wheat and barley, especially the latter, are very backward and show more effects of the drought and hot winds of a week ago, than do other crops. In spite of the cooler weather corn has made rapid growth and has a good color.

Plowing of green manure crops was started on the 22d. Though the ground is very dry, the material is turning under in better shape than usual. Grasshoppers seem to be getting more numerous and poisoned bait was spread again on the most heavily infested areas.

Mr. J. M. Stephens visited the station on the 20th.

Maximum temperature 88, minimum 45; precipitation 1.85 inches.

SHERIDAN:

The first part of the week was somewhat below normal in temperature, but the past two days have been quite warm. The weather has been quite favorable for crop growth, but moisture is needed for small grains. Oats were damaged by the hot winds of the previous week more than was at first apparent, but seem to be recovering quite well.

Plowing of fallow plats in the Rotations was completed the first of the week, and about two-thirds of the remainder of the land to be fallowed has been plowed. Alfalfa has been cut and raked, and with favorable weather should be ready to haul the first of next week. Thinning of corn in the Rotations and varieties has been completed.

Grasshoppers are becoming more numerous on the station and some damage is now noticeable in some of the low places where grass and alfalfa mixture was seeded with a nurse crop. All of the damage so far has been limited to the nurse crop, however. Poison bait has been spread over the station once, and it probably will be necessary to continue poisoning.

Mr. F. L. Kelso is visiting the station today.

Maximum temperature 81, minimum 42; precipitation .34 inch.

DICKINSON:

The two weeks June 6-20 were very dry and windy so that crop prospects decreased very fast. Rainfall since the 20th has amounted to 1.31 inches falling in two showers. These showers were very timely as three days before the wind had been unusually high damaging most all crops by whipping the tops in addition to the drying effect.

Late seeded alfalfa and sweet clover was badly blowed during the wind, and in some places the stand was destroyed entirely. Field pea and soybean varieties were also badly damaged by blowing.

Early varieties of wheat, oats and barley have headed rather short; later varieties likely will be much taller as a result of the rains. Winter wheat is still thin and short and probably will yield less than spring varieties.

Rye and sweet clover for green manure was plowed under on the 20th, the growth of each being light on account of thin stands. Corn was cultivated the second time during the week. Corn in general looks about as good as at this date last year. Although the crop is some later than last year the stands are much better and there has been practically no injury from cutworms.

A "Dairy Special" is due in Dickinson Tuesday, June 26, with several individuals of the five main dairy breeds and speakers from the Agricultural College, the Department and the breed associations.

Maximum temperature 88, minimum 49; precipitation 1.31 inches.

MANDAN:

Agronomy.

Weather conditions the past week have varied from hot and windy to cool and cloudy. High wind prevailed on four days of the week. Rain was recorded on five days of the week with a total precipitation of .53 of an inch, ranging from .01 to .21 of an inch. High wind and showers interfered with haying and this work is now over a week behind. Some hay that was cut a week ago is not raked. Forage crops are still in good condition for hay, but are ready to be cut.

Small grains in most of the rotations are badly dried up. A good rain might help them to some extent. Wheat on fallow is still looking fair, and with a good rain would no doubt make a fair crop. Late seeded grain appears better than the early seeded. Wheat and oats are starting to head out, but are mostly very short.

Corn is making good progress and was given the first cultivation during the week. All other row crops were also cultivated.

Maximum temperature 90, minimum 55; precipitation .53 inch.

Mandan, continued:

Cooperative Grazing Experiment.

A little more rain fell at the pasture than at the station, or over .75 of an inch.

The different units of the isolation transects were fenced out for the season.

Arboriculture.

Route maps and inspection sheets are now all completed in preparation for the summer inspections. There are approximately 776 farm plantings to be visited this year. This number includes all applications for plantings in 1924, all plantings made this year and the 1919 plantings which are to be measured for height data for a comparison of growth of the different species in different sections of the plains region.

The conifer nursery was irrigated the early part of the week for the first time since the transplants were set out. This field was graded and leveled this spring and the benefit of this improvement work was quite noticeable in the manner in which the water could be handled.

Observations for notes on winter killing and winter injury have been completed in the shelterbelt combinations and specie testing blocks. There was practically no evidence of any damage in these plantings. Practically all of the trees in these experimental plantings are at least five years old, so that it is not to be expected that winter conditions will cause much damage in the future. The trees generally have made excellent growth so far this year and as yet have shown no signs of having been affected by the lack of rainfall during the past month.

BELLE FOURCHE: Week ending June 16.

The week was characterized by moderate temperatures and excessive humidity. All crops made rapid growth, even corn showing a marked recovery. All spring grains look as well as they ever have at this season of the year, with the exception of the plats on spring plowing. The winter rye is the best it has ever been. Winter wheat is stooling heavily and has made a good stand on all plats except the one on summer fallow.

Barley and oats have commenced to head and wheat is in the second leaf. Cultural differences between plats are showing up very little except that the grain in the continuously cropped series and the 3 year rotations shows less vigor than that in the longer rotations.

Sorghum was planted on June 13. Wet weather prevented its being planted earlier. Corn, and potatoes were cultivated during the week. All roads were disked and dragged, and the alleys between plats were cultivated.

The soil samples taken on the wheat show that all of the plats are still well supplied with moisture.

Maximum temperature 85, minimum 49; precipitation .04 inch.

BELLE FOURCHE:

This has been another week of moderate temperatures and high humidity. Enough rain fell to keep the crops in good growing condition. Barley and oats are now fully headed and wheat is in the boot. The contrast between grain on spring and fall plowing is marked. That on fall plowing is heading out at a good height while that on spring plowing has not yet commenced to shoot.

Corn is now doing well and gives promise of being as far along as usual on July 1. Corn on fall plowing is several inches taller than that on spring plowing.

Leaf rust is beginning to show up in the winter wheat. No other small grain has shown any rust as yet.

Maximum temperature 85, minimum 49; precipitation .67 inch.

ARDMORE:

More field work was accomplished during the week than during any equal period for the past two and one-half months. Rain fall was recorded on two days, but the soil was in such condition that field work was possible on three days.

The seeding of cane and millet was completed on the 23rd. This was the latest date of finishing seeding since this station has been in operation.

Approximately 20 acres of alfalfa was cut during the week and is now in the cock. The yield is good. All crops are making a very rapid growth. Wheat, oats and barley are fully headed. None of the crops on the station have suffered for water during the season and the prospects for a crop are excellent.

Maximum temperature 84, minimum 47; precipitation .56 inch.

ARCHER:

The weather, to date, during June has been cool. The highest maximum was 80 and the lowest 53. The highest minimum was 53 and the lowest 41. To date the precipitation is considerably more than the mean, the total being 2.33 inches. The precipitation has been accompanied by heavy winds and some hail. This in connection with the cool weather has greatly hindered the growth of crops.

Winter wheat which survived the winter is in boot and has made a vigorous growth. The prarie grasses are in better condition than they have been for a number of years while those under cultivation are not as good as usual. Alfalfa has not made the growth that would be expected.

Archer, continued:

The sunflowers have made a better growth than any of the other spring crops. At present the spring wheat while late is in good condition. The varieties of barley and oats have produced rather thin stands. Flax is looking exceptionally well but the proso millets had to be reseeded. Peas have made excellent growth and while corn has produced good stands the growth has been rather slow. Soy beans, for the most part, are making a very good showing and the potatoes are just emerging. An excellent stand of Crested wheat grass has been secured on about two acres seeded to this crop and a fair stand of sweet clover on about the same area. Poor alfalfa stands have been secured.

Most all of the plats have been trimmed and the fallow plats are being plowed. Practically all of the dead cottonwood trees have been uprooted and the remaining ones have been plowed.

AKRON:

Rotation alleys were cultivated, both orchards cultivated and hoed, Cereal Project alleys cultivated, all corn given first cultivation and rotation corn and Corn Breeding Plat given second cultivation. Several small blocks of ground were seeded to grain and forage sorghums for dual purpose of gathering yield data and furnishing feed. Field pea, cow pea, and soy bean varieties were seeded Friday. Inoculation Experiment with soy beans emerged to stands early in the week. Poor stands of Robust Bean, of Tepary Bean, and of Mikado and Tokio soy beans were obtained. Considerable time was spent in policing up the station grounds.

Barley has been in full head about a week past. Spring and winter wheat are bursting into head and stray heads are showing among the oats. Very heavy south wind early in the week blew down some of the grains, oats perhaps suffering worse. At the same time a large percentage of the set of apples on the Longfield variety was blown off. Plums and cherries did not suffer appreciably.

Maximum temperature 88, minimum 48; precipitation .51 inch.

NORTH PLATTE:

The week has been the most favorable for the accomplishment of field work since the beginning of May. One shower of .55 inch on Monday was the only precipitation. A very high, straight, south wind blew continuously for the four days and nights from Tuesday until Friday. This made hay making rather difficult but more was accomplished than during wet weather.

Corn has been thinned, rye plowed under for green manure, summer tilled plats plowed, and roads and alleys cleaned up in preparation for Field Day.

COLBY: Week ending June 16.

Weather conditions during the past week have remained fine for both growing crops and for field work. It was the 13th before we were able to get any field work done, and the 14th before the soil was really dry enough to work. Sudan for pasture was drilled on the 13th. The D.L.A. sorghums were seeded on the 14th and 15th. Sorghum varieties were seeded on the 15th, as were also the date of planting sorghums.

Winter wheat is fully headed out on the stubbled-in and disked ground plats. All fallow plats are not even heading.

Barley is fully headed out and looks fine on all preparations. Oats are heading and look fine.

Surface planted corn on the D.L.A. project was cultivated today. Corn was thinned to a stand on the 13th and 14th. All alleys were worked today. Two small fields have been planted to milo, the balance of the sorghums are to be put in next week the weather permitting. Weeds are looking better for growth than anything else.

COLBY:

While .40 and .48 inch of rain fell on each of two nights the soil has been in excellent condition to work throughout the week. Work has consisted in finishing of plowing of the summer fallow plats which was delayed by the rain and finishing of planting sorghums for feed. Listed corn plats and varieties and commercial fields were cultivated during the week. Due to the excessive rain it has been almost impossible to get all the weeds out of the corn the first time over. Corn is growing nicely. Sorghums have averaged emerging to a stand from five to six days. There is a good stand of all sorghums put in to date with the exception of Feterita and Dwarf Feterita in the date of seeding test.

Alfalfa was cut today. It is very heavy and will give both an excellent quality and quantity of hay.

Rye has been plowed under for green manure. There was not sufficient stand to make a very heavy growth of straw.

Temperatures have remained moderately cool until the last of the week. The thermometer registered 87 today the hottest to date. Flies are very bad on both work stock and on cattle.

HAYS:

The weather is rapidly getting warmer and drier. Although three showers were recorded during the week the general behavior of the weather would indicate the beginning of another dry period. Already the winter wheat is beginning to suffer for lack of moisture and likewise the spring small grains. Row crops are making good growth and looking fine except for the fact that these crops are weedy. It will require considerable work to free the row crops of weeds. Alfalfa is very slow in starting a new growth since the first crop was harvested.

Hays, continued:

During the week the thinning of sorghums was finished, all kafir, milo, cane and corn plats were cultivated, plowing of reserve block finished, soil samples taken on the M.C. series of plats growing winter wheat, corn, kafir, and alfalfa on the bottom land plats were weighed. Considerable work was done on vacant strips such as borders, roads and alleys for the purpose of killing weeds. Also an application of poisoned bran mash was made for the benefit of the grasshoppers, which are very numerous everywhere, although not quite so numerous as was recently reported from Havre. We are trying out one of the bran mashes recommended by the Nebraska Experiment Station. It is one in which they substitute banana liquid for fruit and molasses. It makes a cheaper mash and requires less work in the preparation. We are watching results. Have not yet given it a thorough test, but believe it will do the work o.k.

The work on the commercial fields has consisted largely in making alfalfa hay, running two stacking outfits. Other work being done is cultivation of row crops and tractor plowing in some of the weedy fields.

If it continues dry and windy as it has been the past two days, it looks like some of the barley plats will be ready for harvest by the last of next week.

Maximum temperature 89, minimum 67; precipitation.44.

GARDEN CITY:

All planting except the last date in the date test was completed Wednesday. The kafir and corn planted in the early part of the week are up to a good stand on most plats. Barley is practically all headed and oats and spring wheat are beginning to head. All spring grains have made a good vegetative growth and bid well to make a crop unless hot winds are received before ripening. The first and second dates in the date of seeding sorghums have been thinned and are being cultivated today.

Wednesday night a rain totaling 1.88 inches was received. Considerable washing took place and it is very probable that some replanting will have to be done on the lister planted plats and on a few of the surface planted ones.

The painting of the dry land cottage will probably be completed next week.

Maximum temperature 87, minimum 61; precipitation 1.88 inches.

DALHART:

More delays were experienced this week on account of rains. The seasonal work is delayed now about one week due to wet weather. The rains in this section have been quite irregular. At the station one rain was recorded which netted .50 inch while in Dalhart, just four miles away, it registered 1.25 inches, official measurement. The rains for the week were recorded as follows: On June 19,(fell Monday night), .68 inch, on the 20th, trace, and 21st,(night of 20th), .50 inch. This moisture coming as it did was sufficient to keep the teams out of the field for some time which cut in on the field operations that were laid out.

Dalhart, continued:

The week has been unusually windy, causing much damage to crops generally. The station had nothing damaged due to soil blowing on account of crops being worked with a harrow when soil blowing started. The plats were wet but were beginning to blow so that crop damage would have been severe, and harrowing was necessary to protect the crops. Many farmers report a complete loss of crops due to soil blowing. Some had crops from six to eight inches high completely cut off and covered by blowing sand. One reports a loss of 40 acres of cotton. These conditions have not been experienced for a number of years to this extent.

The fields dried off sufficiently to start thinning on the 22nd. This work will cover a period of at least a week constant work. It is hoped that all crops can be thinned this year while they are small so that they will not be damaged by the removals. The plows are busy on the increase field and one team is on the cultivator. The first and second dates are being cultivated. The field corn will be cultivated next week. Soil samples are being taken today for the first time this season. This delay from planting until crop emerged has been caused by excessive rains.

Everything that has been planted has emerged to an excellent stand and is growing off rapidly. The cotton which was planted on the 14th was up to a good stand on the 20th. Variety peanuts excepted from above.

During the time the fields were too wet to work, much of the needed hoeing was done around the tree plantings, etc. All of this kind of work is now up to date so that all time can be devoted to field projects.

Maximum temperature 88, minimum 60; precipitation 1.18 inches.
Total precipitation for the month to date is 5.80 inches. For the year to date is 14.19 inches. The 16 year average up to the end of June is 8.41 inches. Soil moisture extends to a depth beyond six feet as ascertained by today's samplings.

TUCUMCARI:

The past week wind movement has been high, making it necessary for many farmers in this locality to replant cotton fields to other crops. After the precipitation of .32 inch on the 19th and .66 on the 21st were encountered, making it necessary to cultivate or harrow the fields as rapidly as possible. Blowing on the station was more general than at any time this season, but the damage to crops was not serious. Cotton plants were set back somewhat, as were the late sorghums and the cowpeas, but it is expected these plants will recover rapidly. While the soil contains an abundance of moisture, the surface was crusted almost immediately after the rains, forming an ideal blow condition.

Much of the south and north fields were cultivated this week, while thinning was begun. All milo plats in the center field and the May 1 date plats have been thinned. Much of the crop will not be ready for thinning for about two weeks.

Tucumcari, continued:

Johnson grass was dug as thoroughly as possible from the two-acre patch in the north field; the patch was then plowed, disked and planted to Reed's kafir. With frequent hoeing it is hoped to kill out this plant this season.

Practically all plats and increase fields have excellent stands, but during the past week of wet weather weeds have grown remarkably fast.
Maximum temperature 93, minimum 61; precipitation 1.01 inches. Evaporation 2.324 inches. Average wind velocity 8.5 miles per hour. Much of the movement during daylight hours running 14 to 18 miles per hour.

BIG SPRING:

During the first part of the week heavy winds prevailed and were accompanied by considerable sand blowing and crop damage throughout the country. There were several hundred acres of good looking cotton entirely destroyed by the sand; some of this had been replanted two and three times, but now it will probably have to be planted to feed for it is getting too late to take a chance on cotton again.

The last of the week has been quiet, and all crops are making rapid growth; the first date of seeding of feterita is heading out.

The work this week has consisted entirely of cultivating and thinning. With the exception of cotton, which is too small, all plats in the dry land project have been thinned.
Maximum temperature 95, minimum 60; precipitation 0.

LAWTON:

Favorable weather for the past ten days has permitted the completion of small grain harvest throughout the county. A little wheat is now coming to market from threshers that are just beginning to operate.

All crops except cotton have made excellent growth. Corn has been in silk and tassel for several days. Another rain within a few days should insure a very good crop of corn. On the creek bottom land a fairly good crop is already fairly assured.

The growing condition of cotton is the poorest that has been observed at this time of the year for several years. The plants are small, poorly leafed, and the root system extremely weak and undeveloped.

Web worms have inflicted heavy damage on the second growth of alfalfa and cotton. Their damage to cotton was rapid. At the present time the infestation seems to be fairly well under control on the station. Bran poisoned with paris green was used quite effectively. Lead arsenate was also used in the form of a spray.

Lawton, continued:

Field operations were continued without interruption the past week and the work of the station is now in pretty good shape in all respects.

"Cane traps" around blocks of wheat carried an extreme infestation of chinch bugs and were plowed under recently. These bugs, however, are pretty well scattered all over the farm that will soon show evidences of damage unless the weather continues very favorable for crop growth.

The rainfall recorded on the station for May mounted to 4.98 inches. The June rainfall up to date is 3.05 inches.
Maximum temperature 95, minimum 70.

WOODWARD:

The weather during the week has been about normal, with one shower of 1.41 inches and another of .03 inch, making a total precipitation for the week of 1.44 inches.

Work during the week has consisted of planting sorghums and disking, spring-toothing preparatory to planting and harvesting alfalfa and wheat. The orchard was also disked. Considerable repair work to buildings is being done.

Dr. George C. Husmann, Viticulturist, of Washington, D. C., visited the station on Friday, the 22nd, and Mr. L. F. Locke, Assistant Agronomist on the Station, left Saturday morning to visit Fayetteville, Arkansas, and Mt. Grove, Mo., Stillwater, Oklahoma, in company with Mr. Husmann, to make some studies of grapes.
Maximum temperature 93, minimum 63; precipitation 1.44 inches.
Evaporation 2.293 inches. Average wind velocity 10.6 miles per hour.

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WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR WEEK ENDING JUNE 30, 1923.

JUDITH BASIN:

The past week has been warm and very favorable to crop growth. Several light showers, totaling .57 inch, were received and field operations were not commenced again until the latter part of the week, after a lapse of 12 days during which time no work in the field has been possible.

All crops have made an exceptional growth and the weeds have more than kept pace with the crop growth. Weeds are unusually troublesome this year and developed unhindered during the recent period of wet weather when all weeding operations and plowing of summer fallow have been impossible. Winter wheat is heading out, all small spring grains are about 12 inches in height, alfalfa is in full bloom, sunflowers have made a growth of over eight inches during the past week and corn has shown a marked improvement.

Field operations have been devoted to the mowing of weeds, plowing of summer fallow land, and pruning of trees. Corrals about the new cow barn were built and the laying of all water pipe and sewer tile was finished. The new office building is also now completed, except for the installation of light and plumbing fixtures and furnace.

HUNTLEY:

Favorable growing weather continued throughout the week and all crops showed a marked increase in height and development. With the exception of some of the barley in the rotations, practically all grains are fully headed and in bloom. Warm, humid weather of the last few days has been particularly beneficial for the growth of corn, potatoes and beans, which crops, up until a week ago, were somewhat backward.

Good showers of the past week have been very acceptable in maintaining the growth induced by the heavy rainfall of the previous week. These showers also brought the precipitation for June up to the 13 year average for this station.

Maximum temperature 84, minimum 44; precipitation .46 inch.

SHERIDAN:

Continued dry weather has prevailed during the past week. All small grains are showing the need of moisture, although there has been little actual damage yet. Grasshoppers are increasing and some damage from them is noticeable on grain where the stand is light. The temperature has been relatively low for this period of the year throughout the week with the exception of one or two days.

Sheridan, continued:

All of the oats and barley, except the late seeded stuff and the later varieties, have headed. All of the varieties of wheat, except some of the latest ones, also have headed. Wheat in the Rotations is just beginning to head. Corn and late forage crops are growing rapidly. There still remains a good supply of moisture in cultivated ground.

Plowing for summer fallow should be completed today. Peas and sweet clover still remain to be turned under for green manure. There is a good growth of both of these crops to be turned under with the exception of sweet clover in Rotation 131.

The alfalfa and the yellow sweet clover cut for hay were weighed and hauled the first of the week. Yields of alfalfa in the Forage crop work ranged from 2000# per acre with rows seeded last year, to 3360# with the 1921 seeding drilled solid without nurse crop. Some of the miscellaneous seedings yielded around two tons per acre, and the average of all plats was 2890#. The plats in the Rotations yielded at the rate of 1900# and 2600# respectively for the 1922 and 1921 seedings. With present conditions a second cutting is doubtful. The yellow blossom sweet clover yielded at the rate of 3720# and 4680# per acre for the rows and solid seeding respectively, and made a good quality of hay. The white blossom sweet clover was cut yesterday.

Poison bait for grasshoppers was spread over the station yesterday.
Maximum temperature 84, minimum 41; precipitation .16 inch.

DICKINSON:

Crop conditions have greatly improved during the week, due to plenty of rain and cool growing weather. On the 27th there was a rain of 1.94 inches and since June 21 the precipitation amounts to 3.49 inches. The total for the month is 4.55 inches. Last year the June rainfall was 6.57 inches while the 31-year average is 3.13 inches.

Wheat and oats on the Rotations are heading a few days earlier than last year and the indications are that the straw will be about a foot shorter. Flax on the Rotations that was seeded May 1 is in full bloom at about two feet high. This crop is better on disked corn ground than either spring plowing or sod. In the flax tillage experiment both the June 1 and June 15 dates of seeding have thin stands on plowed land while the disked plats have good stands.

A fence is being built around the new Rotations on the Normal School land.
Maximum temperature 79, minimum 44; precipitation 2.12 inches. The precipitation January 1 to June 30 is about .02 inch above the station average.

MANDAN:

Agronomy.

The past week has been cool with frequent showers. Rain was recorded on five days of the week with a total precipitation of 1.25 inches. The greatest amount fell on the night of the 24th when .81 inch was recorded. The rains have helped the crops which are looking much better than they were a week ago. From present indications the yields of small grains should be similar to those of last year. Some methods will be light while others will be good.

On the night of the 24th the wind blew very hard and some hail fell which did slight damage to corn. Some people were killed and much property damage resulted from the storm in the southwestern part of the State.

All alfalfa, brome-grass and crested wheat grass, were harvested in the rotations, and for the Office of Forage Crop Investigations during the week. Alfalfa and brome-grass in the feed fields were also cut, but the frequent showers interfered greatly with all haying operations.

Corn is being cultivated for the second time.

Maximum temperature 82, minimum 41; precipitation 1.24 inches.

Cooperative Grazing Experiment.

Native vegetation has improved during the week, and all pastures are in good condition for grazing. The cattle are being weighed today for the June period.

The Northern Pacific Dairy Special, routed through the Dakotas, Montana, Idaho and Utah, stopped at Mandan on the 25th, and gave lectures and demonstrations on the various dairy breeds. Prof. Shepperd, who accompanied the train through North Dakota, with other representatives of the Special, took some little time looking over the work at the station.

The North Dakota State Bank's Convention, in session during the week at Bismarck, visited the station officially, on Wednesday afternoon. A great many questions relative to the growing of trees, fruits and other crops were asked and answered.

Each day during the past week some few farmers have visited and in many cases sought information on matters of interest to them.

Horticulture.

The second spraying of fruit trees has been completed. Also some of the ornamentals on the grounds and all potatoes. Bordeaux was used on potatoes and grapes in combination with arsenate of lead.

Mandan, continued:

Last year's buds were tied to stakes in order to prevent breaking by wind. The buds are making a good growth since the late rains.

Root crops in the acre garden and corn selections have been thinned. Peas have been picked from the early planting.

Weeds have not been as troublesome this year as in some previous years. The fields are being cultivated and hoed for the second time.

Arboriculture.

Shelterbelt Inspectors will follow the routes listed below.

A. W. Emerson - Mandan, N. Dak. July 5, Minot, N. Dak. July 7, Plentywood, Mont. July 13, Sydney, Mont. July 18, Baker, Mont. July 21, Belle Fourche, S. Dak., July 24, Sheridan, Wyo., July 27, Cheyenne, Wyo., Aug. 2, Ardmore, S. Dak., Aug. 8, Fort Pierre, S.Dak. Aug. 13, White River, S. Dak. Aug. 16, Newell, S. Dak. Aug. 20, Faith, S. Dak. Aug. 21, Hettinger, N. Dak. Aug. 24, Mandan, N. Dak. Aug. 25.

Ralph W. Hansen - Mandan, N. Dak. July 5, Williston, N. Dak. July 11, Glasgow, Mont. July 13, Havre, Mont. July 23, Shelby, Mont. July 27, Great Falls, Mont. Aug. 1, Moccasin, Mont. Aug. 7, Billings, Mont. Aug. 15, Winnett, Mont. Aug. 20, Miles City, Mont. Aug. 23, Terry, Mont. Aug. 29, Mandan, N. Dak. Aug. 31.

E. J. George - Mandan, N. Dak. July 5, Beach, N. Dak. July 6, Kildeer, N. Dak. July 9, Mandan, N. Dak. July 11, Flasher, N. Dak. July 13, New England, N. Dak. July 16, Lemmon, S. Dak. July 18, Timber Lake, S. Dak. July 20, Pierre, S. Dak., July 23, Selby, S. Dak. July 25, Linton, N. Dak. July 27, Mandan, N. Dak. July 28.

ARCHER:

The first few days of the week were rather warm, the maximum reaching 88 degrees, but since the 25th, cool, dry weather with northerly winds has prevailed. For the past ten days the precipitation has only been .10 inch. Most crops are in good condition. Alfalfa has burned slightly and winter wheat will suffer in the near future unless there is more precipitation. All row crops have been cultivated once and the sunflowers twice. The rotation plats are receiving the second cultivation today.

Alfalfa, brome and crested wheat grass are ready to cut for hay. The latter will be allowed to mature seed. The sunflowers are about one foot high and are in such condition as to make very rapid growth. The Northwestern Dent corn at the station is much more vigorous than any in this region. This is probably due to this variety becoming better adapted to climatic conditions. However, the cool weather has had a detrimental effect upon practically all other varieties.

Archer, continued:

Mr. J. A. Clark and Prof. W. L. Quayle were visitors at the station June 29. Mr. Clark was interested in the cereal work while Prof. Quayle was here to make arrangements for swine and dairy experiments.

Maximum temperature 88, minimum 40; precipitation .10 inch.

AKRON:

Subsequent examination shows much heavier damage from the wind reported in last week's letter than was evident at the time of writing. Some of the spring wheat plats are as brown as if they had been frozen from the ground up. Evidently the lacerating effect on the oats plats was much greater than was at first suspected. On some of the oats plats fully 50% of the grain is down. Barley and winter wheat do not appear to have been injured greatly. This marks the dashing of what has all along promised to be one of the best spring grain seasons we have had within recent years.

Annual picnic was held Wednesday during a heavy northwest wind which persisted throughout the day. Undoubtedly the crowd was cut down because of the inclemency of the weather. Estimates of the number of people here vary from 1800 to 2500. Miss Kitty D. Washington, of the Home Economics Department of the State Agricultural College, Mr. A. T. Steinel, erstwhile known among farm paper readers of this region as "Farmer Putnam", gave the address of the day. Professor George E. Morton, who was on the program for the main address, failed to appear.

One fallow block was disked during the week. Half-day was spent in the forestry disking. The forage sorghums were cultivated. Station roads were graded and dragged. Thinning of the Rate and Date Experiment with corn was completed. Heavy wind reported on picnic day did further damage to the growing crops.

Mr. W. T. Craig, of the Cornell Experiment Station Staff, visited the station Monday, on his way from California to New York. Mr. J. Allen Clark and Mr. Merritt N. Pope, of the Cereal Office, visited the station Wednesday.

Maximum temperature 95, minimum 47; precipitation 0.

NORTH PLATTE:

Conditions for the most part have been favorable for crop growth and the accomplishment of field work during the week. Some high wind occurred, but this was less continuous and less severe than during the preceding week. Temperatures have been somewhat low. A minimum of 42 degrees was reached on the 28th.

All spring grains are in full head and making a good showing. Winter wheat was severely damaged by the high winds and sudden weather change of last week. The crop on summer tilled and early fall plowed land, which had made a heavy growth and offered an excellent crop prospect up to this time, was especially hard hit. With available moisture in the upper four feet practically all leaves died and the heads are not filling. It seems that only shrivelled grain can be produced under these conditions.

North Platte, continued:

The attendance at the Station's Second Field Day was poor. About 100 people were present. About half of these were local farmers and the other half from adjoining counties. Farmers have been so delayed with their work that a large attendance could not be expected. Messrs. W. W. Burr, J. D. Russell, and P. H. Stewart, Agronomists of the Lincoln Station, were present and rendered assistance in explaining the work of the Station.

COLBY:

Weather conditions remained fine for work during the week. Work during the week consisted in packing all summer fallowed ground, seeding the June 30th date of planting sorghums, seeding the methods of planting sorghums, working the bindweed areas, cultivating corn on the D.L.A. project for the second time, putting up the first cutting of alfalfa, finishing plowing of fallow fields and plats, and hauling and grinding barley.

Barley is ripening fast and will be ready to cut the first of the week. Oats will also be ready the coming week. From all appearances, winter wheat will not be due to harvest for ten days yet. Corn is growing fine. There will be an excellent stand of sorghums on all except the first planting date of the feteritas.

Precipitation for June was 3.27 inches, for the year to date is 13.46 inches; evaporation for June was 6.75 inches; mean temperature for the month was 69.6 degrees, mean maximum was 81.8, mean minimum was 57.5 degrees; average wind velocity for 8 ft. anemometer for June was 11.4 miles per hour. Growing conditions during June have been excellent, no hot winds and no crops suffering for lack of moisture.

Visitors during the week included Messrs. Merritt N. Pope, of the Barley Investigations Office, J. Allen Clark, of Cereal Investigations, and Professors Laude and Parker from Manhattan.

HAYS:

A small rain early in the week temporarily relieved the suffering of small grain crops by drought. The crops had been drying and even burning badly.

All field work was progressing nicely until Friday afternoon when it was suddenly interrupted by a storm.

Harvesting of small grain plats was commenced Friday afternoon and with the assistance of the storm the harvest, and for the most part, threshing was completed, and in very short order.

Hays, continued:

After about half-dozen plats were harvested with a new binder, a hail storm broke, and in about 20 minutes time the storm had passed over and the harvest was over. The piles of ice were higher than any stubble left on the plats. The plats of grain, some of which were standing 30 to 36 inches high before the storm, were cut shorter to the ground than the plats upon which the binder had worked. The destruction of small grains on the project was complete.

Sorghums were cut to the ground, and corn which was three feet high was stripped of all foliage and many of the stalks cut to pieces. A second storm of cyclonic nature the following night completed the destruction of the corn, or most of it snapping the stalks off at the ground. This storm took the chimney off the field laboratory, and slightly moved one corner of the new building off the foundation. It also scattered a portion of the instrument shelter for half a mile, and scattered some of the remains of a neighbor's buildings over the project. Two lines of the project fence collected considerable building material. These buildings were originally located about half mile from the project. The neighbor, who lost these buildings, also lost all his crops by hail.

The hail storm during the afternoon and the wind during the night caused a heavy loss among the farmers. Many buildings,mostly barns, were destroyed. The station lost some of the smaller buildings and considerable damage was caused in scattering the alfalfa hay stacks. The hail completely destroyed all the small grain on the west side of the station and it is understood about 50% on the east side of the farm. That part of the farm has not yet been inspected.

This is the first year since 1909 that the Dry Land Project has suffered a complete loss of small grains by hail.

Maximum temperature 96, minimum 35; precipitation, total of three rains, about two inches.

GARDEN CITY:

Weeds as well as crops have taken advantage of the favorable growing conditions that have prevailed during the past week. No extreme temperatures have been recorded and all crops are looking good. Barley is beginning to ripen and spring wheat on some of the plats is beginning to turn yellow. Where the stand of wheat is poor, weeds have nearly smothered it out.

This week has been spent in trimming roadways and alleys and in doing some cultivation. The last planting in the date test was made today. Some replanting was accomplished but considerable more will be necessary on the lister planted plats.

Friday evening a rain of .25 of an inch was received. Some hail accompanied the shower, but very little damage was done in this immediate vicinity.

Maximum temperature 93, minimum 50; precipitation .25 inch.

DALHART:

The past week has been quite warm and conducive to crop growth. There were two small showers during the week, one amounting to .08 and the other .17 inch. Neither of these showers delayed the work. The wind movement has been unusually high during the week but was not constant. Considerable damage to crops over the panhandle is reported from these winds. The chief damage amounts to crops being either cut off or covered up with blowing sand, thus destroying the stand. There was no damage to station crops from sand or other causes.

Today winds up the planting on the station. The last date is being planted, also the last of the increase plantings. This makes the main planting of the increase fields at least two weeks late due to climatic conditions. Other field work has advanced rapidly all week. The thinning work is up to date for the first time in several years. The thinning this year was done at the best time for that work so that there will be no resulting damage from the removals. There still remains several days thinning work but the remaining crops are not quite ready to be thinned. All plats and fields were trimmed to plat lines during the week so that all plat fields have a neat appearance as well as being to exact size. Everything has been cultivated to date that is ready to be cultivated. This week all work has been about caught up with so that from now on there is not likely to be any serious delays due to heavy precipitation. Soil samples were taken during the week.

Maximum temperature 94, minimum 53; precipitation .25 inch.

TUCUMCARI:

Conditions the past week have been ideal for crop growth. Two cultivators have been kept moving most of the week, while it has been necessary to do some hoeing where weeds were in the rows. Most of the north field plats have been thinned, while by next week most of the variety plats and a good share of the date plats will be ready for thinning. Some plats have not fully recovered from the injury received by blowing sand ten days ago, but no replanting on this account will be necessary.

Work on the well has progressed very slowly, due to the fact that the old casing could not be raised and smaller casing was therefore required. This spring the light plant was moved to the office building and this week the leads were replaced with heavier wire, and the splices soldered and taped.

Maximum temperature 98, minimum 57; precipitation 0.76, making the total for June 3.55. This was the fourth wettest June in nineteen years and precipitation to date, 1923, is approximately three inches above the average. Wind velocity, 6.3 miles per hour.

BIG SPRING:

Weather conditions this week have been warm and dry; as a result all crops have made a rapid growth. Cotton, which was injured by the sand storms of the first part of the month, has just begun to make a good growth during the past week.

Big Spring, continued:

The April 15 date of seeding of Feterita, Dwarf Milo and Dwarf Feterita, and also the May 1 date of Feterita are heading. Early Wheeler peaches are starting to ripen, but will yeild only a light crop; they were injured by the late frost last spring.

The winter wheat plats were harvested this week, but with very poor yields. The strow did not get over 12 to 18 inches high on any of the plats, so it was necessary to use the mower instead of the binder.
Maximum temperature 102, minimum 55; precipitation 0.

WOODWARD:

The fore part of the week was spent in finishing planting of the sorghums and cowpeas, and the latter part in cultivating crops which were planted two weeks ago. A gang was kept at work all the week thinning sorghums on the experimental plats, which work was practically finished.

Very little was planted on this station until the middle of June, due to nearly two months of rainy weather and temperatures so low that sorghum crops would not do well. During the latter half of June the planter has followed the disk or spring-tooth almost continuously, and on this, the last day of June, practically all fields are up to a good stand, and fairly free of weeds. The small grains are all in the shock. In spite of the season starting so late, the work is practically as far along as usual.

Grasshoppers were a serious menace two weeks ago but seem to be much fewer in number at present.

The week has been a variation of very hot and very cool days.

Mr. Locke spent the week in Arkansas and Missouri, studying fruits with Dr. Husmann. Mr. Conner, of the Oklahoma Farmer, was a station visitor Thursday.
Maximum temperature 99, minimum 51; precipitation .21 inch. Average wind velocity 7.5 miles per hour. Evaporation 2.695.

ARDMORE:

Showers fell two days during the week which somewhat delayed harvesting of alfalfa, but no serious damage was done to the crop. The total precipitation for the month of June was 5.93 inches, the heaviest for the same month any year since the station has been in operation except in 1915. The 11-year normal for the month of June is 2.83 inches.

Five small fields of alfalfa having an aggregate acreage of 17.7 acres were harvested during the week. The average yield was 2178 pounds per acre. Some of these fields are used for hog pasture and were cut early so as to allow for a second crop. Much better yields are expected from some of the larger fields on the station.

Ardmore, continued:

All crops are in excellent condition. The prospects for a small grain crop never were better in the history of the station, but one other good rain will be necessary to cause the grain to mature properly.

A severe hail storm on the thirtieth destroyed a large acreage of crops 10 miles east of the station.

Maximum temperature 90, minimum 49; precipitation .39 inch.

BELLE FOURCHE:

The weather has been warm all week and the humidity has continued high. Thunderstorms have occurred nearly every day though the precipitation has not been high. A small amount of hail fell on the thirtieth but the stones were so small that they did no damage.

All of the small grains are well headed except for a few plats on spring plowing. The amount of moisture left in the plats is not large but only a very few plats have shown any signs of suffering for water. A small amount of leaf rust is appearing on the winter wheat and oats.

Corn is nearly knee high and its condition is better than usual at this date. Thinning the corn was completed early in the week.

The precipitation for June was 3.81 inches which is 1.26 inches above the average. The precipitation for the year to date is 7.71 inches which is .65 inch below the average.

The temperature reached 90 degrees for the first time this year.

Maximum temperature 90, minimum 47; precipitation .44 inch.